Environmental Performance Report

Dexter Corporation
Adhesive & Coating Systems
Seabrook, NH

1998 Reporting Year

Dexter Corporation Adhesive & Coating Systems (ACS), Seabrook, New Hampshire has completed its first year of participation in the EPA StarTrack Program. This Environmental Performance Report satisfies one of the annual requirements of the Program. It includes calendar year 1998 (January 1, 1998 through December 31, 1998) and can be considered our Base Line Report. The compliance audit for this Reporting Year was conducted June 23 - 24, 1999 and is also included. For purposes of normalizing reporting, pounds of production will be used.

Beverly Fischer, Manager, Health, Safety and Environmental Affairs for Dexter Corporation Electronic Materials completed this Report with the assistance of Cathy Follansbee, Business Librarian for ACS.

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Facility Profile

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Facility Overview

Dexter ACS, Seabrook, produces and sells release agents, structural adhesives, hot melt adhesives and applicators. These products are sold nationally and internationally.

The facility incorporates features that provide a safe workplace for our employees and minimizes impact to the surrounding environment. Dexter ACS, Seabrook, is the first New Hampshire company to achieve OSHA's VPP Star status. The facility currently employs 113 employees / 140 globally.

The 106,000 square foot facility includes 4 manufacturing units, warehousing and laboratories. 3 interior above ground tanks have been used to store large volume raw materials. At present, the tanks are out of service and have been cleaned and capped. There are four 6000-gallon underground storage tanks on site. The tanks are doubled walled, cathodically protected and include a leak detection system. The tanks contain Isopar C, Isopar E, Dibutyl Ether and 90 Solvent. The truck pad located in Shipping and Receiving area is sloped to contain unplanned releases. The containment area is actuated with a single valve. Waste materials are stored inside the building.

The facility resides on approximately 13.7 acres and is surrounded by thriving Class A & B wetlands.

Policies, Organization & Management Systems

"Noncompliance is not an option. Compliance is not enough. We go beyond compliance and do what is most effective."

-K. Grahame Walker
Chairman and CEO, The Dexter Corporation, July 23, 1996

Dexter Adhesive & Coating Systems, Seabrook, subscribes to the Corporation's HSE Policy.

It is the policy of Dexter Corporation to be an environmentally pro-active specialty materials company.

As a responsible corporate citizen, Dexter is committed to compliance with all legal requirements applicable to its operations worldwide.

Dexter will carry out this policy by continually improving management systems for compliance and risk control in all aspects of its businesses. Dexter's management systems will be supported by on going auditing programs, including corrective action to manage all identified risks to health, safety or the environment.

To ensure that its health, safety and environmental policy is implemented worldwide, Dexter will:

- Educate employees on health, safety and environmental issues and responsibilities;
- Control pollution at the source whenever possible;
- Make protection of health, safety and the environment as essential factor in the design of products and processes;
- Conserve resources through appropriate reuse, recycling or reclamation of materials and products;
- Participate actively in industry, government and community efforts to promote health, safety and the environment;
- Measure and report to management Dexter's progress in reducing potentially adverse impacts on health, safety and the environment;
- Integrate health, safety and environmental objectives into strategic planning and business operations at all levels;
- Provide appropriate recognition for achievements in health, safety and environmental issues.

Every Dexter employee is responsible for assuring that both the spirit and intent of this policy are fully implemented throughout the company. It is a fundamental duty of managers to be informed on all health, safety and environmental issues. Every employee is encouraged to inform higher management promptly of any deviation from the legal requirements for compliance and the directives of this policy.

As a responsible corporate citizen, Dexter Corporation Adhesive & Coating Systems is committed to:

1. Compliance with all applicable regulatory requirements;
2. Controlling pollution at the source whenever possible; and
3. Continuous improvement of Health, Safety and the Environment through process improvement and teamwork.

Dexter has initiated management programs that achieve the objectives of this policy:

1. Corporate audit program using internal expertise to ensure compliance and that Best Management Practices are used. Audits are conducted on a quarterly basis and rotated throughout the organization;
2. Publication and distribution of our Corporate Environmental Policy with which every Dexter site complies;
3. Corporate and Business Unit sponsorship of our facility's OSHA VPP Star Program and StarTrack activities, as well as, ISO 14001 certifications at other sites;
4. Recognition awards for health, safety and environmental achievement for individuals and teams by both the Corporation and Business Unit;
5. Programs to recycle Fluorescent tubes and cardboard;
6. Integration of safety and environmental requirements into all employees' jobs;
7. Reducing the use of organic solvents in favor of water based products;
8. Participation with the voluntary Pollution Prevention Program from NHDES with results including improved yields, reduction of "not one time through" batches and reduction of waste batches;
9. Participation in EPA's 33/50 and Greenlights programs, which fostered pollution prevention for environmental improvement.

The Vice President, General Manager has overall responsibility for environmental management at the Seabrook facility. The Manager, Health, Safety and Environmental Affairs (HSE) supports this activity on a daily basis. The HSE Manager reports to the Vice President, General Manager and has a dotted line reporting responsibility to the corporate Vice President, Environmental and Process Management.

The HSE Manager has cross-functional support from other departments at the facility including Human Resources, Supervisors, and Laboratory Personnel.

Many of management systems and procedures were developed and are maintained as part of our OSHA VPP Star site status. These include, but are not limited to, management of change, training, tanker unloading and preventative maintenance.

Community Relationships

Community impact is included in Dexter's policies and procedures.

1. External communications are initiated in response to requests for information. The General Manager or their delegate reviews all requests for information and responds on behalf of the company. Information provided by Dexter ACS, Seabrook, to external parties will:

- Be understandable and adequately explained; and
- Present an accurate and verifiable picture of Dexter and its environmental management system, its environmental performance and other related matters.

3. Coordination with local emergency planning is ongoing. Members of the fire department and the local emergency planning committee (LEPC) have visited the plant and reviewed our materials, how they are stored, what kind of emergency response equipment/supplies would be available to the fire department and our procedures.

The Risk Management Plan (RMP) under the Clean Air Act Amendments (CAAA) 112 (r) does not apply to this facility. However, under the General Duty Clause, CAAA 112 (r)(1), we review the possible release scenarios for our materials in an effort to identify potential serious off-site consequences. Modeling using RMP Comp version 1.06 is now being used to provide backup information to the scenarios. EPA assumptions are used to define the incident. The materials in question at this facility include monomethylamine, methyltrichlorosilane, trimethylchlorosilane, ethylenediamine, hydrochloric acid and anhydrous ammonia.

Operational Metrics

The metrics are based upon the StarTrack Environmental Performance Reporting guidance.

Inputs: Energy and water usage.

Electricity	1998
Total Electricity usage (kWh)	3,040,094
Total Electricity usage (million BTU)	10,378.9

Natural Gas	1998
Total Gas usage (million BTU)	17056.7

Total Gas Consumption = Process + Comfort
17056.7= 6082.8 + 10973.9
Process includes HMAS heat transfer unit and Product ovens

Total Energy usage (million BTU)	27,435.6
Million BTU/pounds produced	.00549

Water Consumption	1998
Total Water usage (gallons)	708,100
Water usage /pounds produced	.1416

Toxic Chemical Use

Following is a list of chemicals for which Dexter ACS, Seabrook, requires reporting for 1998 to US EPA under SARA 313. (TRI) These materials are processed and sold as constituents of our products. All materials were reported using Form A Reports.

Also listed is DEM's current status with other chemicals of concern.

Toxic Chemical Use (SARA 313)

	1998 (lbs.)
Toluene	71,095
Methyl Ethyl Ketone	71,095
Hexane	51,296

Ozone depleting substances

This site does not use ozone-depleting substances as ingredients in products or in their manufacture.

Polychlorinated Biphenyl (PCB's)

No known PCB containing equipment exists at the facility.

Asbestos

The facility contains no asbestos. The site has equipment that contains refractory type rock wool. Any maintenance of this equipment is accomplished by outside contractors.

Air Emissions

Dexter ACS, Seabrook, works vigorously to avoid chlorinated solvents, ozone depleting chemicals and hazardous air pollutants (HAP's) in their products. Chemicals that have been and are commonly used in this industry segment, but which are not used by this facility include:

- Methylene chloride
- Trichloroethylene
- Perchloroethylene
- Freon
- Xylene
- Isocyanates
- Antimony compounds
- Lead compounds
- Cadmium compounds
- Di-2-ethylhexylphthlate

Emissions to air (tons):

	1998
Hydrochloric Acid	**.07**
Methylmethacrylate	**5.475**

The facility uses natural gas in a small boiler to heat a closed loop oil system and uses small gas fired heaters to provide temperature control. The amount of gas used is low, as seen in the input section of this report and the equipment is well below the capacity requiring permitting. The volumes are therefore exempt from reporting. Greenhouse gases generated are insignificant and exempt for reporting purposes.

Water Emissions

Dexter ACS, Seabrook, discharges only sanitary wastewater into either its sewer connection to the Town of Seabrook Publicly Owned Treatment Works (POTW) or its 2750 gallon septic tank and existing leachfield. All process water is collected and disposed as a non-hazardous waste.

Hazardous Waste

The site is a large quantity generator of hazardous waste. Most of the materials are characteristically ignitable although the site also will generate some corrosives, oils, toxic and "U" listed materials. The large volume of non-hazardous waste is from the process water. Wastes are managed under a procedural hierarchy of reduce, reuse, recycle. At present over 80% of the hazardous wastes are recycled.

	1998
Hazardous Waste (pounds)	160,630
Pounds of Production	5,000,778
Hazardous Waste (pounds/ production pounds)	.032
Non-hazardous Waste (pounds)	201,510
Non-hazardous Waste (pounds/production pounds)	.040

Waste minimization is an important activity at Dexter ACS, Seabrook. Many employees have been engaged in teams that look at the production process to determine how to lower the amount of waste produced and therefore sent for disposal. Some efforts that have been successful in our operations include:

- Redesign of a Release process that reduced the amount of residual oil/solvent mixture that must be disposed of as waste;
- Segregation of regulated hazardous wastes from non-hazardous wastes;
- Reusing caustic cleaning solutions to cut waste creation by 75%;
- Substitution of non-hazardous cleaners for solvents in equipment cleaning;
- Elimination of solvent use in the maintenance area.

Product Performance

- Our products are market driven. There is an emphasis to replace the traditional solvent-based materials with aqueous alternatives to improve both worker safety and minimize impact to the environment. The rubber or elastomer market has been a driver in this transition with regards to mold release compounds. Development programs are currently underway for additional market applications outside of the elastomer industry.
- Each new raw material is considered for its environmental impact before use. Our new products are screened for environmental impact prior to commercialization. This review is done in a team involving R&D and HSE.
- Our number one selling mold release compound contains no hazardous air pollutants. It is non-flammable and contains low concentrations of volatile organic compounds (VOC). This allows ease of shipment, minimized impact to the environment and enhanced worker safety. It is an improvement to the solvent-based products on the market.
- Our methacrylates minimize the amount of chemical resins that are dispensed onto fiberglass parts for bonding. These low VOC compounds reduce air emissions about 90% from those of the high VOC resins.
- Our hot melt spray adhesives are 100% solid thermoplastics that are an alternative to solvent-based adhesives such as contact cement or ozone depleting aerosol adhesives. These products enable our customers to reduce air emissions. They produce neither toxic fumes nor environmental compliance problems. They are 100% usable so waste generation and worker safety issues are reduced unlike solvent-based adhesives. The applications include mattress manufacturing, upholstered furniture, boat cushions and automotive seating.
- Dexter produced the first hand held spray hot melt adhesive applicator. This allowed the customer mobility in their production, as well as, less clean-up producing less waste.
- As an answer to one of our customers, products are now supplied in fiber drums that are easier to dispose than metals drums.

Audits

Compliance

In support of the site's StarTrack Program, a compliance audit was conducted at the Seabrook site of June 23-24, 1999. The audit team consisted of two Dexter internal auditors and a third party certifier. The audit consisted of a plant tour and document review.

Summary - Compliance management systems were found to be in place and effective and operators were knowledgeable of their environmental responsibilities. **The audit team discovered no noncompliance.**

1. **RCRA –** Reviewed documentation of training, arrangements with local authorities, manifests, contingency plan, waste characterization, reporting. All documents were in place, up to date, and available. Toured and reviewed documentation of waste storage area and satellite sites. All waste was within the allowable limit, inspections were completed and containers properly labeled. **Recommendation:** Improve labeling of new and used fluorescent light bulbs due to their storage arrangement. **Action:** **Complete**

2. **Clean Water Act –** There are no industrial wastewater discharges from the facility that require permitting. Stormwater requirements were reviewed. **Recommendation:** Label overhead piping from tank farm to building. Evaluate spill containment of piping system to minimize the possibility of an accidental release. **Action:** To be completed Q1 2000.

3. **Clean Air Act –** Reviewed documentation on file including the General Duty RMP analysis. No recommendations were given. **Recommendation:** Complete RMP documentation. Meet with State representatives to confirm that the facility is exempted from state air permitting requirements. **Action:** To be completed Q1 2000.

4. **EPCRA –** Reviewed Tier II report, TRI report, Contingency Plan, MSDS's. No recommendations were given.

5. **TSCA –** Reviewed TSCA compliance including documentation on file and procedures. No recommendations were given.

Environmental Management Systems

The EMS audit will be scheduled fourth quarter 1999 due to the HSE Manager position being currently unfilled.